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Amendments to the Claims:

The following claim listing is intended to replace previous claim listings.

Claims 1 and 3 are amended.

Claims 15 and 16 are new.

Listing of Claims:

1. (Currently Amended) A hydrocarbon sensor comprising a substrate made of a solid electrolyte that conducts protons, and a pair of electrodes formed on the substrate, wherein at least one electrode of the pair of electrodes contains Au and Al, ~~at least part of the Al is present in elemental aluminum and aluminum oxide are present in the at least one electrode as at least one selected from the group consisting of elemental aluminum and aluminum oxide~~, and assuming that a content of elemental Al in the at least one electrode is "a" mol%, and a content of aluminum oxide in the at least one electrode is "b" mol%, "a" and "b" satisfy a relationship: $a + 2b \leq 7$, ~~at least one of the elemental aluminum and aluminum oxide is contained in a mixed state in the at least one electrode, and~~ the at least one electrode contains at least one metal selected from the group consisting of an AuAl₂ alloy and elemental Au, wherein the total mol% of the metals selected from the group is at least 50 mol%.

2. (Canceled)

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3. (Currently Amended) A hydrocarbon sensor according to claim 1, wherein the at least one electrode contains AuAl_2 and elemental Au in a molar ratio of $\text{AuAl}_2 : \text{Au} = X : 1-X$, where X is at least 0.6 0.62 and less than ~~1~~ at most 0.88.

4-13. (Canceled)

14. (Previously Presented) A hydrocarbon sensor according to claim 1, wherein the AuAl_2 alloy and the at least one of elemental aluminum and aluminum oxide are contained in a mixed state in the at least one electrode.

15. (New) A hydrocarbon sensor according to claim 1, wherein the at least one electrode and its lead are connected to each other via a conductive adhesive containing Pt and Au or a conductive adhesive containing Al and Au.

16. (New) A hydrocarbon sensor according to claim 1, wherein the at least one electrode and its lead are connected to each other via a conductive adhesive containing Al and Au, and a component of the at least one electrode is the same as a component of metal contained in the conductive adhesive.